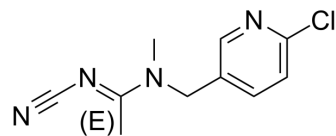


## Acetamiprid

<b>Cat. No.:</b>	HY-B0823		
<b>CAS No.:</b>	135410-20-7		
<b>Molecular Formula:</b>	C <sub>10</sub> H <sub>11</sub> ClN <sub>4</sub>		
<b>Molecular Weight:</b>	222.67		
<b>Target:</b>	nAChR		
<b>Pathway:</b>	Membrane Transporter/Ion Channel; Neuronal Signaling		
<b>Storage:</b>	Powder	-20°C	3 years
		4°C	2 years
	In solvent	-80°C	6 months
		-20°C	1 month



### SOLVENT & SOLUBILITY

#### In Vitro

DMSO : 100 mg/mL (449.10 mM; Need ultrasonic)

Concentration	Mass		
	1 mg	5 mg	10 mg
1 mM	4.4910 mL	22.4548 mL	44.9095 mL
5 mM	0.8982 mL	4.4910 mL	8.9819 mL
10 mM	0.4491 mL	2.2455 mL	4.4910 mL

Please refer to the solubility information to select the appropriate solvent.

#### In Vivo

- Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline  
Solubility: ≥ 2.5 mg/mL (11.23 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)  
Solubility: ≥ 2.5 mg/mL (11.23 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% corn oil  
Solubility: ≥ 2.5 mg/mL (11.23 mM); Clear solution

### BIOLOGICAL ACTIVITY

#### Description

Acetamiprid is a neonicotinoid insecticide used worldwide. Acetamiprid is a nicotinic acetylcholine receptor (nAChR) agonist, and is shown to be associated with neuromuscular and reproductive disorders<sup>[1][2]</sup>.

#### IC<sub>50</sub> & Target

nAChR<sup>[1]</sup>

#### In Vivo

Acetamiprid decreases in body weight and mildly affected spermatogenesis. <sup>[1]</sup>  
Acetamiprid decreases the expression of testosterone-metabolism genes, nAChR subunit genes, and proliferation-

associated genes in mice<sup>[1]</sup>.

Acetamiprid disrupts subsequent testosterone biosynthesis by decreasing the rate of conversion of cholesterol to testosterone and by preventing cholesterol from entering the mitochondria within the Leydig cells. These effects caused reproductive damage to the rats<sup>[2]</sup>.

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Male Sprague Dawley (SD) rats <sup>[2]</sup>
Dosage:	10 mg/kg, 30 mg/kg
Administration:	Oral gavage; daily; for 35 days
Result:	Inhibited testosterone synthesis by affecting the mitochondrial function and cytoplasmic adenosine triphosphate production in rat Leydig cells.

## REFERENCES

[1]. Terayama H, et al. Effect of acetamiprid on the immature murine testes. *Int J Environ Health Res.* 2018 Dec;28(6):683-696.

[2]. Kong D, et al. Acetamiprid inhibits testosterone synthesis by affecting the mitochondrial function and cytoplasmic adenosine triphosphate production in rat Leydig cells. *Biol Reprod.* 2017 Jan 1;96(1):254-265.

**Caution: Product has not been fully validated for medical applications. For research use only.**

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